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THE

Journal of the Society of Arts,

AND OF

THE INSTITUTIONS IN UNION.

111TH SESSION.]

FRIDAY, SEPTEMBER 22, 1865.

[No. 670. Vol. XIII.

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Proceedings of the Society.

MUSICAL EDUCATION COMMITTEE.

The following information, relating to the state of Musical Education in Italy, has been received through Her Majesty's Secretary of State for Foreign Affairs:—

ROYAL MUSICAL INSTITUTE OF FLORENCE.

The following is a translation of an account of this Institution kindly furnished by its President:—

The foundation of the Royal Musical Institute of Florence is recent. It was set on foot on the 15th March, 1860, and at the beginning of the year 1862 it was opened for public instruction. The Royal Institute is an establishment for public and gratuitous instruction in music. There are schools both for the rudiments of music and for musical reading, for solfeggio, for solo and part-singing, for keyed, stringed, and wind instruments; lastly, there are schools for thorough bass, for counterpoint, and for composition, and a school of æsthetics and musical history. Students of both sexes have thus an opportunity of obtaining in this Institute a complete musical education in every branch of the art; besides which, for the more advanced pupils, there are added periodical exercises in orchestral music, both instrumental and vocal.

The pupils do not reside in the Institution, but live in their own houses, and come to the Institution only to receive instruction in the different schools, and to take part in the musical classes. The admission of pupils, and their removal from one class to another, depends on examination; and, previous to the grant of the diplomas, the pupils who have finished their course are subjected to a strict examination.

The Institute is under the direction and government of a president, assisted by three professors, who form what is called a Council of Management.

The Institute possesses a musical library, composed of selected music, and books relating to musical literature.

The Academy is composed of resident, corresponding, and honorary members.

The Examiners are chosen from the resident members of the Academy, as are also the three members of the council of management; these latter are elected triennially.

The number of pupils is not limited, being in practice regulated by the applications for admission, the result of the examinations, and the means available for imparting

instruction. According to average experience, the number may be calculated at 220 pupils, one-third females and one-third males. Detailed particulars relating to the courses are given in the rules below.

The Institute has no endowment or property of its own, nor does it receive any payment from the pupils, who are gratuitously instructed. It is maintained by a grant from the state. The expenditure amounts annually to 40,694-70 lire,* of which 13,672-50 lire go to pay the management exclusive of the president and director, whose office is gratuitous, and the remaining 27,022-20 lire are for the instruction. The grant for apparatus is regulated by what is required; the average has been 14,300 lire. In this is not reckoned the rent of the place where the Institute is held, this being state property.

The following are the rules of the Royal Musical Institute at Florence:—

CHAPTER I.

The Institute is established to teach, singly and collectively, all the pupils of the Institute. It is intended that it should be opened periodically to all musical composers; that it should maintain a library of music for the use of the public, especially artists; that it should grant rewards to deserving artists; that the best works of modern and ancient masters should be performed there; that it should comprise a section for administration and direction; also one for instruction; and a musical academy.

At the head of the Institution is a president, a secretary, and a committee formed from the academy. There are sub-officers and others appointed by the president, and under the orders of the secretary, for the service of the Institute.

The musical academy is composed of resident and non-resident academicians, as well as a class of honorary academicians.

The Institution is in all respects a government one. It provides the musical service of the State on all public occasions, sacred and secular.

CHAPTER II.

The president has power over all the departments of his Institution. His office is permanent, but unpaid.

Section 2.

The secretary is responsible, under the president, for the financial administration. He receives the reports of the general conduct of the schools, and sees that the librarian and musical secretary perform their duties.

Section 3.—The Council.

The council is composed of three resident academi-

* Italian lire.

cians, appointed by the Minister of Public Instruction from amongst those who are not instructors in the academy. Their power is only corporate; they are elected triennially. There are also three supplementary councillors, in case of illness. The council is the judge in all examinations for admissions, &c. They receive an annual stipend.

CHAPTER III.—ON INSTRUCTION.

Section 1.—Schools or Classes.

1. History of music and æsthetics as applied to music. This class has a master with the title of professor.
 2. Harmony, counterpoint, and composition. A master with an assistant.
 3. Accompaniment from a figured bass and from score. Has a master.
 4. Singing, vocalisation, theatrical instruction, elocution, and deportment. Has a master and assistants when necessary.
 5. Elementary instruction, reading music, and solfeggio. The pupils are instructed from the first principles to the practice of solfeggio. A master and assistants.
 6. Organ, to enable the pupils to accompany the singing from notes. A master.
 7. Pianoforte, for professional pianists. A master.
 8. Secondary pianoforte, to enable singers to accompany themselves.
 9. Violin and viola.
 10. Violoncello.
 11. Double bass. In this class the scholars are taught from the groundwork of their respective instruments up to the perfect execution for an orchestra or a quartet.
 12. For wind instruments of wood.
 13. For ditto of brass.
- In these two classes the pupils are taught from the rudiments up to perfect orchestral execution.
21. A choral school is attached to the Institute, where the people can be instructed in choral singing. It does not form an integral part of the institution, nor is it a necessary step to the other schools. The instruction is gratuitous in this as in the other schools.
 23. The instruction in both schools is gratuitous.

Section 2.—Of Masters.

24. The masters and sub-masters are all appointed by Government, on the recommendation of the president.
25. The masters are responsible for the good regulation of the classes to which they are attached, the arrangements of which have been settled by them with the president.
27. The masters and sub-masters must assist at the examination of their pupils.
28. The sub-masters and the assistants are chosen by the president from amongst the better pupils; their post is gratuitous, but if they have held it for a year they are usually paid something.

Section 3.—Of the Pupils.

29. The conditions on which the pupils are admitted are—Morality, good health, and natural aptitude. The age varies according to the nature of the instruction sought, but is never under nine years. Full knowledge of reading and writing and the elements of arithmetic are necessary. Special conditions for admission to each school are laid down in general rules. The pupils are admitted provisionally, and if they pass the examination are drafted into the Institute.

31. Fitness to pass from one class to another, or from one school to a superior one, is determined by the examination called "*passaggio*." After two failures a pupil is dismissed from the Academy.

32. To have the right to call themselves pupils of the Institute, it is necessary, at the completion of the studies, for the pupils to go through a final examination for a license; if this is well passed they are declared "*Accredited Pupils of the Institute*," and obtain their diploma. This gives them a preference, *ceteris paribus*, over others in competitions for any public employment.

33. The pupils must behave with respect both to their colleagues and their masters, to whom they must pay implicit obedience, and conform to all the rules of the establishment.

34. Flagrant and repeated faults amongst the pupils are punished by expulsion on the sentence of the president.

Section 4.

35. During the scholastic year such of the pupils as are considered competent practice concerted music. This practice is independent of the usual classes, and is as follows:—For bowed instruments and for quartett practice, under the direction of the violin master; for wind instruments, and for the execution of good harmony, under the alternate supervision of the masters of these schools; for the school of singing in concert with or without full orchestral accompaniment.

36. Public concerts by the pupils are given at stated periods and at the end of the academical year.

ROYAL CONSERVATOIRE OF MUSIC, MILAN.

The Vice-President writes as follows:—

In answer to your letter I send you the following notices, which I hope will be a complete reply to the dispatch of the Minister, dated 16th of February, 1865.

The Royal Conservatoire of Music at Milan is wholly maintained by the State.

The Conservatoire gives a complete musical education, and a fair literary education. The musical instruction is directed by 29 professors and by about 30 teachers, selected from amongst the best pupils of both sexes. For the literary branch there are seven professors. There are two other professors, one of deportment, pantomime, and ballet, the other for drill. There are, besides, a librarian and copyist, a tunist of the piano, a cashier and accountant, two inspectors, a secretary, seven inspectors for the pupils, four servants, a carpenter and decorator, a messenger, two porters. These persons (except the teachers of both sexes, who receive no payment for their services) cost the Government yearly 78,600 lire.

The Conservatoire instructs annually about 240 pupils of both sexes.

Each year the Conservatoire turns out from 12 to 15 finished pupils of both sexes.

To the pupils of both sexes who distinguished themselves the most at the yearly examinations is granted from year to year a monthly pension, arising from an endowment of 12,720 lire.

For all the other requirements of the establishment the State assigns 19,868-90 lire annually.

The fee which the pupils pay in each year is about 4,000 lire.

To this letter is added a copy of the rules of the Conservatoire, from which a more detailed account may be obtained, and to which is added statistics for the year 1862.

ROYAL COLLEGE OF MUSIC, NAPLES.

The Royal Neapolitan College of Music is composed of 100 pupils boarders at free cost (besides those who pay), and of the gratuitous day school with 120 scholars. In the holidays of the free boarders the free day pupils have the right to compete at the examinations with those who pay, and the director of music and four professors of composition and part-singing, and four other examiners chosen by the governor of the college, together with the said director, are the judges. The 100 pupils are divided into fifteen different classes, according to the following proportion:—

Class.	Pupils.
1. Composition, counterpoint, part-singing, and pianoforte.....	16
2. Singing.....	12
3. Violin	18
4. Viola.....	6

Class.	Pupils.
5. Flute	4
6. Fife	1
7. Hautbois	4
8. Clarionet	4
9. Fagotto.....	4
10. Horn.....	6
11. Trumpet	4
12. Trombone and ophicleide	4
13. English cornet.....	1
14. Violoncello.....	8
15. Double-bass	8

Two pupils, one from the violin class and one from the double-bass class, are instructed in the harp. The pupils who pay, have their choice of the classes, but not without considering in some degree the wants of the college.

The director of music has the superintendence of all that relates to the Art, and the musical instruction of the 100 free pupils and the instruction of those who pay is intrusted to 20 professors, divided into the following classes:—Two masters of counterpoint and composition, two masters of part-singing, two masters of singing, two masters of the pianoforte, two masters of the violin, two masters of the violoncello, one master of the double-bass, one master of the harp, one master of the clarionet, one master of the flute, one master of the oboe and English horn, one master of the horn, one master of the trumpet, trombone, and ophicleide.

Chamber practice is superintended by two other professors of music. The literary teaching of the pupils is entrusted to seven professors; one of ethics and logic; another of Italian literature and elocution; another of the French language; another of the Latin language, mythology, and universal history; another of the Italian language, geography, and history of their own country; another the elements of the Italian language; and the seventh, writing and arithmetic. Each year there are public trials to show the progress made by the pupils in their respective classes in composition, as well as in instrumental and vocal music; and also representations annually in the theatre of the Dramatic College, as examples for the School of Elocution; and in Passion week in the Church of St. Peter a Maiella the celebrated "Miserere" is sung by the resident as well as by the day pupils.

The musical lessons are given in three days of each week; on two other days there are vocal and instrumental concerts for the exercise of the pupils and the study of classical music in the library of the college. The musical instruction of the day pupils is entrusted to a fixed number of the resident pupils, with the title and rank of masters of the day school, and they are selected from the best scholars among the resident pupils. These masters give lessons three times a week; and at other times in the week the day scholars receive lessons from six professors of music with the title of inspectors. These are divided into one for singing, another for finger instruments, another for wind instruments, another for the violoncello and double bass, another for the violin, and the sixth for the conducting of concerts.

The revenue of the College is derived from two sources, one fixed and the other variable. The first consists of an annual payment from the state of 125,197 lire, of which 46,455-55 lire are paid directly from the Treasury to the masters and to others employed by the College; 55,000 lire paid in compensation for the rents of the College taken by the State; and a supplemental grant of 23,741-64 lire. The variable revenue consists of about 58,448-08 lire arising from the rents of the College, given by private persons for the foundation of four musical scholarships, abolished at different times, and since amalgamated into the present College, the rents varying according to the letting of the town and country properties.

The terms of paying pupils are—monthly 38-25 lire, and they find their own board, bed, and washing. The annual expenditure includes the maintenance of the

boarders (who all receive from the College, board, clothing, washing, instruments, music, medicine, &c.); the day schools, the management, masters, teachers, servants, and repairs, &c.

The supreme government and administration of the College, in every branch, is confided to three governors, nominated by Royal decree, who give their services without any emolument whatever.

EXAMINATION PAPERS, 1865.

(Continued from page 669.)

The following are the Examination Papers set in the various subjects at the Society's Final Examinations, held in April, 1865:—

ITALIAN.

THREE HOURS ALLOWED.

Candidates for a First-class Certificate are required to translate into English prose the following extracts, and answer the grammatical questions attached to them:—

I.

Non come fiamma che per forza è *spenta*,
Ma che per se medesima si *consume*,
Se n' andò in pace l'anima contenta.

A guisa d'un soave e chiaro lume,
Cui nutrimento a poco a poco manca,
Tenendo al fin il suo usato costume.

Pallida no; ma più che neve bianca,
Che senza vento in un bel colle fiocchi,
Parea posar, come persona stanca.

Quasi un dolce dormir ne' suoi begli occhi,
Sendo lo spirto già da lei diviso,
Era quel che morir chiaman gli sciocchi.

Morte bella pareva nel suo bel viso.

(F. PETRARCA, Trionfo della Morte.)

1. *Spenta*: Give the infinitive and the first person preterite of this participle.

2. *Consume*: This is a poetical licence for the sake of the rhyme. How should this word end according to grammar?

3. *Se n' andò*: What is the difference between this expression and simply *andò*?

4. *Parea*: Write the whole of present and the preterite tense, indicative mood, of this verb.

5. *Sendo*: What is the more common form of this word?

II.

Sveno, del re de' Dani unico figlio,
Gloria e sostegno alla cadente etade,
Esser tra quei bramò che, il tuo consiglio

Seguendo, han *cinto* per Gesù le spade:
Nè timor di fatica, o di periglio,

Nè vaghezza del regno, nè pietade

Del vecchio genitor, sì degno affetto

Intepidir nel generoso petto.

Lo spingeva un desio d'apprender l'arte

Della milizia faticosa e dura

Da te sì nobil mastro; e sentia in parte

Sdegno e vergogna di sua fama oscura,

Già di Rinaldo il nome in ogni parte

Con gloria udendo in verdi anni matura:

Ma più ch' altra cagione, il *mosse* il zelo

Non del terren, ma dell' onor del cielo.

(T. TASSO, La Gerusalemme.)

1. *Cinto*: Give the whole present and preterite tense, indicative mood, of this participle.

2. *Intepidir*: What part of the verb does this word stand for in this instance? How should it otherwise be written?

3. *Mosse*: Write the whole present tense, indicative mood, of this verb.

III.

Translate into Italian:—

After expressing his regret that I had not been able to

prolong my stay at Venice, my noble friend said, "At least, I think, you might spare a day or two to go with me to Arquà. I should like," he continued thoughtfully, "to visit that tomb with you;" then, breaking into his usual gay tone, "a pair of poetical pilgrims—eh, what say you?" That I should have declined this offer, and thus lost the opportunity of an excursion which would have been remembered as a bright dream through all my after-life, is a circumstance I never can think of without wonder and self-reproach. But the main design on which I had then set my mind of reaching Rome, and, if possible, Naples, within the limited period which circumstances allowed, rendered me far less alive than I ought to have been to the preciousness of the episode thus offered to me.

(T. MOORE'S Life of Lord Byron.)

IV.

IDIOMATIC PHRASES.

(To be translated into English, not literally, but by equivalent expressions.)

Stetti in forse.
Se mi venisse il destro.
Non so trovare il verso.
Egli parla d'ognuno.
Colgo quest' occasione.
Si fece avanti.
Parlatemi chiaro.
Cogliere il punto.
Che ve ne pare?
Se l'ebbe a male.

Candidates for a Second or Third-class Certificate are required to translate the following extract into English, and likewise to answer the grammatical questions given below:—

Proponendomi io di scrivere la storia delle cose succedute in Italia ai tempi nostri, non so quello, che gli uomini della presente età saran per dire di me. Conciosiachè mancati col finire del decimosesto secolo gli eccellenti Storici fiorentini, i quali soli forse fra gli Storici di tutti i tempi, e di tutte le nazioni scrissero senza studio di parti la verità, i tempi andarono sì fattamente peggiorandosi, e l'adulazione in guisa tale distendendosi, che il volere scrivere la storia con sincerità pare opera piuttosto incredibile, che maravigliosa. E non so perch' io m'oda dire tuttavia, che la storia è il lume del tempo, e che insegna bene il fatto loro ai popoli, ed ai principi: imperciocchè scritta secondo il costume, che prevalse, io non so quale altra cosa ella possa insegnare altrui, fuori che a dir le bugie; e qual buona guida nel malagevole cammino della nostra vita siano queste, ognun sel vede, stantechè i negozj umani con la realtà si governano: non con le chimere. E già i più tra coloro, ai quali io appalesai questo mio pensiero, mi dissero apertamente, o ch' io non oserei, o ch' io non potrei, od all' ultimo ch' io non dovrei mandarlo ad esecuzione. Pure, pare a me, che se l'adulazione si cerca da una parte, che certamente si cerca, molto ancora più si offra dall'altra, e che più ancora siano da accagionarsi di viltà gli scrittori, che di rigore, o di ambizione i principi.

(C. BOTTA, Storia d'Italia.)

GRAMMATICAL QUESTIONS.

1. Decline, with the definite articles in both numbers, the nouns *pianeta, re, azione, moglie, stuolo, colpa*.
2. Give two or three examples of an Italian noun substantive, with its augmentative and diminutive terminations.
3. Write the possessive, demonstrative, and relative pronouns in both genders and numbers, showing which of those pronouns take the definite article and which do not. Explain *when* the article should be omitted before such pronouns as otherwise require it.
4. Write the persons given of the following verbs of the regular conjugations:—They believe (*credere*); they were working (*lavorare*); you went away (*partire*); thou

shalt feel (*sentire*); I would hope (*sperare*); let him lose (*perdere*); speak thou (*favellare*); fly not thou (*fuggire*); freed (*liberare*); following (*seguire*).

READING INDUSTRIAL EXHIBITION.

This Exhibition was opened on Wednesday, the 13th inst. The Bishop of Oxford opened the proceedings by a prayer. The Old Hundredth Psalm was then sung by the members of the Reading Philharmonic Society.

The Mayor afterwards briefly stated the circumstances under which the design of forming such an exhibition was conceived and carried into effect, and invited the Bishop of Oxford to address the company.

The Bishop of Oxford said—Mr. Mayor, my lords, and ladies and gentlemen, I have very readily responded to the call made on me to address a few words to you upon the interesting occasion of opening this exhibition. I believe it is calculated to be of real and abiding benefit to this town and the surrounding districts, in both of which I feel so deep an interest; and if, therefore, it is in my power in the slightest degree to help forward so good and useful an undertaking I hold that I ought—as I unfeignedly do—that I ought to rejoice to take any part whatever in its success. When I say that I believe this exhibition, and exhibitions such as this, tend to advance the interest of the town and neighbourhood in which they are opened, I do so for several different reasons. I think, in the first place that such exhibitions are of use to us fiscally as a nation—I believe that the history of almost all scientific discoveries teaches us the same thing. They have been very rarely reached by men, however gifted, however profound, sitting down and reasoning out the conclusions to which at last they have come. On the contrary, that which, in almost every instance, we call accident, because we have no better word to explain it—that development of events the connecting links of which are so swift that they escape the power of our mind to trace them—has mainly enabled us to arrive at almost every one of our great discoveries in applying science to the use of man. I am sure every one of you will remember the wonderful illustration of the truth of what I have just said in the discovery of that which alone has enabled the locomotive engine to run upon our railways, which have added so much to the prosperity of this town in which we are now assembled. The great difficulty in that case was to keep the fire burning which was to keep the water boiling which was to make the wheels move. Experiment after experiment was tried. The longest heads, the most practical ingenuity, set themselves to work to find how the thing was to be managed. Bellows were invented to blow the fire by which the wheels were to be turned in their gyrations. They, however, failed to effect the object in view, and I think for twenty years we were without the least improvement in elucidating the simple problem which we were endeavouring to solve; when, purely accidentally, the constructor of one of these engines, to save the trouble of two chimneys, made the chimney which carried away the smoke carry away the surplus steam, and thus the problem was solved. A vacuum was created, and the blast furnace for which man had been for years labouring was in a single instant flashed upon the intelligence of mankind. That I believe is the history of those discoveries throughout; and how does it apply? I think it means that when tinder is made there comes from the conflict a spark which, falling on that prepared tinder, enables you to get the light you may be long watching for in vain. Now, I maintain that such tinder is the mind of man, prepared to a great extent by such exhibitions as the present, and made ready for what we call the *accidental* opportunity to seize at once on that which it would never have understood if it had not undergone this process of preliminary teaching, and so by some sudden intuitive perception been able to grasp that which is offered to it, and to give to waiting mankind that which it had in vain endeavoured by a slower process to reach. I am of

opinion, therefore, that if throughout our towns the observing faculty is educated in that way among the great mass of the producing classes, the best possible results to a nation such as ours, in a fiscal point of view, will be produced. I also maintain that it is a very great thing in an intellectual point of view. I know it has been lately stated that a great man, Adam Smith, was mistaken in saying that there was a tendency, in setting men to purely mechanical work, to destroy the courage of their minds for discovery, the elasticity of their minds for general application, and the powers of their mind for general usefulness. For my own part I entirely believe in the truth of the doctrine which Adam Smith has laid down. If you get a mechanic to perform certain perfunctory acts, what do you do? You first set to work his fingers and all the mechanical instruments with which God has furnished his body. These you so practise that he comes to perform that one particular act with unerring accuracy and marvellous rapidity without any intellectual effort. What is the result? You have succeeded in making his hands unfit for any other work, save that to which you have limited altogether his endeavours, so that he will be a bungler at any other work which you call upon him to perform; you dwarf his general powers by concentrating their action on one minute act. The body is the tabernacle of the mind, and that which you have done for the man's body by so limiting his exertions you do for his mind too. If you accustom him to regard himself as a mere producer of one particular thing—the maker, for instance, of the head of a pin, or the fixer of the head of a pin upon the shaft—no doubt you may have succeeded in making him wonderful at that, but you have done it at the expense of cramping, first the elasticity of the body, and next the elasticity of the mental powers with which Providence has endowed him. Now this is all Adam Smith advances. He does not say you may not guard your mechanic against it, by teaching him at once to do that which he must do for the good of society perfectly, at the same time remembering that he is not a machine for doing that alone, but a man endowed by God's good will with all the mysterious attributes of humanity, and that you may maintain that humanity quick and lively by other exertions at other times, so as at once to produce the mechanical subtlety you want, and yet the marvellous framework of humanity unentangled in him by the mere accident of that particular labour. Now, then, I say such institutions as this are intended and calculated to do that very thing. They lead a man who might otherwise be chained down to his own particular work to aspire beyond it, to show us that he is a wheel in the mighty machinery that is now acting everywhere around him in such a land as this. You give him an opportunity of combining with the highest skill in his own peculiar function the opportunity of enlarging his faculties to the greatness of the common estimate with which you bring him into contact. Well, then, intellectually, I say it is for this reason of the greatest moment; and allow me to say that it is even of more moment in a moral sense, for I believe there is a great moral interest at stake in such a development of humanity as this. If, indeed, it were to stop with this, if it were to be nothing more than informing men's understandings, the education of their tastes, or creating in them appetites for something intellectually higher than that which they otherwise would have, I for one should be false to my dearest convictions if I did not say that education taken alone would be a failure; but I do say that, taken in its proper place, it is a great instrument in the moral elevation of humanity. The first great army of injuries against which humanity has to contend in its moral development consists of those which rest as the basis of their force on the passions, and on the sensible faculties of the bodily form in which the spirit tabernacles—the desires of the appetite, the love of drink, the mere bodily excitement to which those things minister—those, as we all know, stand first in the way of the true intellectual and higher moral education of the

human family. Now, I believe, if you do give to your hardworking man opportunities like these of stirring up his intellectual faculties, teaching him—not by means of dry lectures, but by the practice of the day and by his own experience, that although he is an animal he is something vastly more than an animal; if you teach him that there is within him a divine spirit, a discerning taste, a mind reaching after many things, and that there is a pleasure in the gratification of those higher tastes which his Creator has endowed him with, which is greater than the pleasure, more enduring than the pleasure, more elevating than the pleasure which waits on any mere bodily excitement—I say that you have taken the very first step to raise that workman out of that which might have been to him corruption and a tomb. You have taught him to aspire to be indeed, in God's world, an intelligent creature, instead of being a mere enjoying animal. Those men who know as we do, that Christianity waits ever present to impregnate the prepared soil with the blessed seed of a yet higher teaching and of an eternal truth, must look upon such intellectual excitements as this as upon the teeth of the plough when it breaks up the hard ground, not that it can, like the sowing of the seed, yield the golden harvest, but that the breaking up of the ground must under ordinary circumstances as a rule be the preparation for sowing that higher seed which will be the prelude of the blessings of the intellectual harvest. Therefore it is that I believe that such exhibitions as this which we are opening this day are both intellectually and morally of great good to the people. I see in them, too, many other elements of civilisation besides those upon which I have just ventured to touch. Everything which tends amongst us to break down in our own estimate of things the mere artificial distinctions of rank and place—and while they are preserved as God's appointment, and as essential, I believe, to the happiness of all prevents their so usurping all attention, and filling all eyes, that in the common estimate of men labour is considered as something degrading, and that people who have least of this world's good are in a measure lower than those who have the most—everything which guards against this evil I think such institutions as this may greatly help you to attain. For, after all, what are the greatest gifts that God gives? Are they not the natural gifts that God gives to any one of us? Are they not that marvellous faculty of genius that operates we know not how, but which does part one man from another, and is greater than any inheritance of outside things, which after all are little more than the dress he wears for a season, and casts off for ever in his hearse? Is not this imperishable gift of genius, the kindling of the fire which comes from the fire that is eternal, and which burns in the mind of the poorest amongst us, a gift greater than any of the external circumstances which belong not, indeed, to us, but are, as it were, the accidents—the play-clothes of the actors on the stage of life, while each plays his little part in the sight of man. I believe such institutions as this have a great tendency to develop the gift of genius. A man may have within him some of the great gifts of God, yet, unless there is something that brings out to his own knowledge first, and then to the knowledge of those around him, that they exist within him, they may sleep even through that man's life. We all remember, for instance, how a man has been remarkable for some great gift of genius; has, through his childhood, been struggling under difficulties because his schoolmaster could not understand that genius, and who, because God had not given him the attribute of learning without infinite toil and trouble ordinary matters, could not suppose that he was developing his genius, perhaps in portraying his somewhat tyrannical schoolmaster on the under side of some well-concealed desk under which he thought he would never look. It is perfectly certain that unless there is some mode of developing genius in the workaday world of ours, in many cases it never will become developed. The general spread of a certain kind of educa-

tion, unless we watch it, while it has a tendency to raise all to one practical level, has also a tendency to sink all to one practical level. It ignores altogether the recognition of the gift of genius; it stamps a perpetual repetition of the same coin with infallible accuracy from the same die, but it never can create genius. It never can give to the world men who are capable of shaping a statue such as Canova could chisel or such as Michael Angelo could design. Therefore with education such as it is now we more than ever want things which shall be, as it were, suggestive to minds in which genius may be slumbering, to call it into action and enable it to assert itself. A friend of mine the other day, travelling abroad, went to examine a famous school, and was shown over the whole of it. Its workings having been explained to him with the greatest minuteness, he found that provision was made for everything he could conceive; but there was nowhere, as far as he could see, the least allowance made for the exercise of any individual power, or any individual gift, in any one of the scholars, and he was turning away from the establishment with a very sad heart when his eye accidentally alighted on a slate put carefully aside, on which was an admirably-drawn picture of two schoolboys making horrible faces at one another. After having examined it he put it aside, exclaiming, "Thank God, this is a good school, after all." Now, I do not want these hideous faces; but I want beautiful repetitions of the finer works of nature, to act as suggestive instances, awakening in men's minds their higher energies, and reminding them that they possess powers which they never before suspected, so that they may be induced to imitate that painter who in the days of his youth said, on looking at one of the masterpieces of art, "I, too, am a painter." I believe that by spreading these works throughout the country we call forth the faculties of men by familiarising them with the highest works of genius; and I think we can see in it another good—it reveals man to man. A master who has under him in his manufactory one of these individuals in whom sleeps the seeds of genius, discovers through the medium of such an exhibition as this the hidden powers of humanity in his workman, and feels that a work has been done which he himself could never have compassed; immediately he looks upon this brother as indeed a brother, in a manner which he had never before appreciated, he sees in him, instead of a mere performer of some drudgery or some work for which he is to be paid, one in whom God has sown the seed of true humanity, and he begins to honour that humanity, so that the servant receives his due from his master, and the master himself is raised in the scale of creation by his acknowledgment of the gifts of Heaven in the man whom he employs. For all these reasons, then, believing that the welfare of this nation is indeed helped on by such institutions as these—believing that they tend intellectually to benefit those who produce for them and those who study in them—believing that they have also a moral effect on those connected with them—believing that the kindly interchange of human affections and mutual self-respect are encouraged and increased by such exhibitions, I do heartily rejoice that this one has been opened among us. I rejoice first for those whom I see in that gallery opposite, who have contributed such striking works of industry to this exhibition. This is to them, I think, a day of lawful triumph—a day of real intellectual rejoicing. They come and see the work which they have been enabled to accomplish; they see it in its beauty, and they look—as I know men often look—with wonder at the work of their own hands, as they ask themselves how they were ever able to conceive that which they have executed. I rejoice in this event too for the sake of the great mass of this district. I rejoice in it further because it has afforded an opportunity to those upon whom God has bestowed wealth and station of contributing to the good of their neighbours. I rejoice to find the names, the honoured names, of almost all those who occupy the highest position in this county vying with each other in this true work of common kindness and use-

fulness. I rejoice—and I know that this whole meeting will sympathise with me in that joy—that that conduct has been approved, and that the example of it has been set by our beloved Queen. In this Royal county we rejoice in this Royal countenance. We rejoice in it, not as those who merely wait upon the great, but as those who see in the ancient throne of this ancient kingdom the impersonation of its own greatness, and the instrument whereby God has preserved its liberties. I for one feel that our gracious Queen, in making these loans to this exhibition, was not merely fulfilling the dictates of a drier, colder, and harder judgment, but that her affections ministered too to the same result. Does any one in this place who has known the natural touch of grief think that upon this occasion she forgot to whom Britain owed its first Great Exhibition—whose thoughtful mind forecast those benefits of which I have feebly spoken—whose unfailing energy carried that first attempt to a successful issue—whose loving care for his wife's people made him face anything by which he could benefit them in any way? No: she who was even then, piously, in memory of the dead, unveiling that memorial statue, felt that she was ministering to the like remembrance when she lent the treasures of Windsor Castle to this industrial exhibition at Reading. She felt that she was doing that which he would have done, and which he would have her do; and, doubtless, with the joy of benefiting you was associated the remembrance, the blessed remembrance, of that great and good prince—for, alas! it is now no flattery to speak of him as he was; and I may venture to say, as one who knew him with even an unusual intimacy, that he was one whom I never found surpassed in intellectual capacity—whose mind seemed to me to be capable of being applied with equal facility to every kind of study—who forgot nothing that he had learned—who classified in his philosophical and capacious mind all the multitude of things which his eager thirst for knowledge unsparingly supplied to him, and who ruled all under the most unbending law of what he believed to be his duty, consulting from morning till night, as best he could, the interests of the people by whose throne he had been, by God's providence, placed. Yes, it is to me a joy to think that the noble lady in ministering to our benefit could honour that immortal memory; and following her, as I have said, the possessors of treasures in this county have lent them most freely to us. It is for you, my friends, now to make the best use of them, not to gaze on them with that mere empty stare which conveys little to the mind; but, whatever may be your special sphere, to study the model set before you here in that sphere, to ask yourselves why such a work is good; what is the reason that it affects you; wherein should you have failed if you had attempted to do the like;—and so patiently and humbly to take as your model that which is here presented to you, aiming in all this to do your duty in the state of life to which God has called you—to develop more perfectly the instruments of service with which he has endowed you, and in the midst of a redeemed world to work as renewed men, educating yourselves for service here, and for the blessed visions of the Almighty hereafter.

The "Hallelujah Chorus" was here sung by the volunteer choir. The Earl of ABINGDON then moved a vote of thanks to the Bishop of OXFORD for his attendance upon that occasion and for the delivery of his impressive address. Colonel LOYD LINDSAY seconded the motion, which was at once carried by acclamation. The Bishop of OXFORD acknowledged the compliment, and then, at the request of the MAYOR, declared the exhibition to be open.

A vote of thanks to the MAYOR for his services in promoting the exhibition was proposed by Mr. BENYON, and seconded by Sir F. GOLDSMID.

The MAYOR returned thanks for the honour which had thus been conferred upon him; the "National Anthem" was sung; and the ceremony of the opening of the exhibition was brought to a conclusion.

BRISTOL WORKING MEN'S INDUSTRIAL EXHIBITION.

On Tuesday, the 19th instant, the Working Men's Industrial Exhibition, in the Great Drill-hall of the 1st Gloucestershire (Bristol) Volunteer Corps, in connection with Bristol, Bath, the West of England counties, and South Wales, was opened with much ceremony by the mayor and civic authorities, the bishop, dean, and clergy, and numbers of the resident and neighbouring gentry attending. The Exhibition comprises specimens of handicraft in almost every department of industry, numerous specimens of sculpture and carving, models of steam engines and other machinery, specimens of needlework, and there is in connection with it a gallery of pictures. It had been intended by Lord Palmerston to open it, but his lordship's indisposition prevented his doing so, and Mr. Gladstone and Lord Stanley, who were invited at a late hour to accept the vacant honour, being both pre-engaged, the distinction was proffered to and accepted by the chief magistrate of Bristol, Mr. W. Naish.

Prior to the ceremony there was a procession of the different trades and benefit societies, which at the council house was formed by the Mayor, in state, the high sheriff, Mr. Cruger Miles, and other dignitaries.

As soon as the procession entered the building the bands of the volunteer corps conjoined struck up the National Anthem.

The Mayor then addressed the assembly, and formally opened the Exhibition. The Bishop of Gloucester and Bristol then offered up an appropriate prayer, after which the choir sang Handel's "Hallelujah" chorus from the *Messiah*, and the proceedings closed with singing the National Anthem.

COLONISATION; ITS ASPECTS AND RESULTS.

By WILLIAM STONE, Esq.

(Continued from page 628.)

LITERATURE AND SCIENCE.

The important influence which our colonies exert upon the production and sale of books will be evident to every one devoting a short time to the examination of the matter from whichever point of view we regard it, whether as the scene of their subject, or as the market for their sale.

Writers of some of our most interesting books of travels and important scientific works on botany, geology, and natural history, have found their subjects in our colonies, and writers of fiction and poetry have laid some of their most exciting scenes in the adventurous period of colonial discovery, or in the piquant treatment of circumstances suggested by events in their history. Not only have home writers and men of science been largely influenced and benefited by colonial subjects, but able men who have received their scientific training in England are to be found permanently located in every colony, and either by original treatises published on the spot, or by their valuable contributions to English literary and scientific works, greatly promote the sum of human knowledge. Notice must also be made of the meteorological, astronomical, and magnetic observations, which are constantly being carried on in so many of our colonies, essentially contributing to advance our acquaintance with the phenomena of nature.

Some interesting points of practical science in connection with our dependencies and colonial possessions, and to which we can only make the briefest allusion, have reference to the attempts at acclimatization and the introduction of various animals and vegetables into new regions. Millions of sheep, goats, cattle, pigs, horses, and poultry overrun the continent of Australia and the island of New Zealand, in the latter of which no four-footed animal except a rat was previously known to exist.

One of the most curious and exciting chapters of adventures is the tale of Governor Bligh, whose crew,

while prosecuting the purpose of introducing the bread fruit tree from Tahiti into the West Indies, mutinied, and he himself with eighteen others were cast adrift in an open boat, 23 ft. long, 6 ft. 9 in. wide, 2 ft. 9 in. deep, and reached Timor forty-one days after leaving the ship, having run 3,618 miles, and notwithstanding their extreme distress, no one perished in the voyage. The mutineers of the *Bounty* subsequently formed that curious, anomalous and peculiar community known as the Pitcairn Islanders, who have been recently removed to Norfolk Island, owing to the increase of their numbers outgrowing the capacity of the former place.

The successful exertions of Mr. Ledger to convey the alpaca from South America to New Holland, and the praiseworthy attempts to render us independent of South America for quinine, by the cultivation of the cinchona plant in India, deserve a more extended notice than our space will allow of being given. And we may further add that in many of the colonies zealous exertions are being made to encourage and protect our English game and other birds, and while we are discussing the propriety of abolishing or modifying our game laws, they fear that unless some protection is afforded the game will be almost entirely shot off, as is the case in the more settled districts of the United States of America, laying some stress on the fact that while in some countries game, as in the pleasant land of France, is scarce or unobtainable, the English preservers of game secure an abundance of sport but not a monopoly of the produce, which is sent to market, and thus all persons are enabled more or less to secure the gratification of partaking of game food at a not immoderate price, certainly at a much less cost than the actual preservers incur for what they consume. These observations are susceptible of numerous other illustrations, from both the animal and vegetable kingdoms, if space permitted, thus we have the sustaining power of the world greatly increased by this largely-extended cultivation of food, man's health improved by the enlargement of his medical resources, and even luxuries rendered available and abundant.

While some of the sons of colonists receive a liberal education from men of learning who have departed from English shores, others resort to the English universities and colleges of law and medicine to prosecute their studies, and return with English honours to take a high position amongst their fellow-colonists.

Some of the colonies have successfully started literary works of humour, as the Melbourne *Punch*, many of the articles in which would not at all disgrace its Fleet-street contemporary, as, for instance, the pieces entitled "A Colonial Christmas Ode," by a Saturnine New Chum, and "Enoch Arden boiled down," which space and the purpose of these remarks will not allow of being introduced.

English books are not more eagerly sought for by the most rapacious home reader, than by colonists spread far and wide over the whole earth, who, having leisure and sufficient means, annually obtain from the English market immense numbers of all kinds of books, not only of light and cheap literature, but also the more expensive works of reference. In my own case I may say that some of the most pleasant acquaintances with English standard works I ever made, were by my solitary readings in a New Zealand hut, with no civilised companion than the thoughtful dead.

A touching illustration of the tenacity with which, under the most unlikely and painful circumstances, readers will cling to an old and pet volume, we have in the fact that one of the few rescued remains of the Franklin expedition was a torn fragment of the "Vicar of Wakefield." How the genial soul of Goldsmith would have gladdened at the thought that his simple pathetic tale would solace the last sorrows of such heroes. Re-acting upon our national writers is this influence of a world-wide audience. Magazines, newspapers, periodicals of all kinds, speed on their way by sail and steam to every nook of the world; from the depths of the backwoods of Canada to the most

recessed sheep station in Australia, open eyes, minds, and hearts lovingly wait the arrival of the mail bringing from home its choicest words of mirth and wisdom.

Fine Arts.

FOREIGN EXHIBITIONS.—The section of Fine Arts of the Cercle Artistique, Littéraire, et Scientifique, of Antwerp announces the foundation of an annual exhibition of the works of Belgian and foreign artists. The exhibition is to take place in a gallery erected for such purposes in the establishment of the Cercle itself, and the direction is entrusted to a committee composed exclusively of artists, amongst whom are Baron H. Leys, Comte Dubois, and MM. Bource, Dauriac, de Keyser, de Brackleer, Lamorinière, Tadema, Van Hove, and Verlat. A lottery is to take place in connection with the exhibition, and the prizes are to be purchased from the works of artists whose names are to be drawn by lot from the list of members, and of associates paying ten francs a year to the association. The first exhibition is to take place this year, but the date is not yet announced.—Exhibitions of the products of industry and works of art are to take place next year, almost simultaneously, at Copenhagen and Stockholm. A commission, with Prince Oscar of Sweden at its head, decided some time since that such an exhibition of Scandinavian productions should be opened at Stockholm on the 15th of June; a short time afterwards a commission was formed at Copenhagen, under the presidency of the Prince Royal of Denmark, and it decided on a like exhibition, to be opened on the 1st of the same month. The artists and manufactures of Copenhagen, naturally considering the coincidence of the two exhibitions unfortunate, suggested the adjournment of the latter to the year 1868. A correspondence was opened between the two commissions on the subject, but no very satisfactory result has been arrived at. The Copenhagen exhibition is to be opened on the 1st of May, and closed 1st of July, while that of Stockholm is to open on the 15th of June, as originally proposed, but Danish contributions are to be received until the 15th of July, and the reports of the jurors are to be deferred, in order that what is sent from Denmark may be included.

Manufactures.

CHINA GRASS.—The experiments which have been made in France with this fibre, and which have been duly recorded in this *Journal*, are being followed up by the necessary steps to carry the matter into practical operation. A company is announced as having been formed for the preparation, combing, and cottonisation of China grass. The capital of the company is 3,000,000 francs, to be raised in shares of 500 francs each; and amongst the ten members of the Administrative Council are the Maire of Rouen, the President of the Tribunal of Commerce of that place, four other members of the Chamber of Commerce of the City, of the General Council of the Department, or of both, and three are members of the Administration of the Bank of France. The composition of the new company proves that the expectations raised respecting the economic application of this well-known but little-used fibre are entertained by practical men.

ALANTHUS SILK-WORM.—The long continuance of warm weather has greatly favoured the experiments made in the rearing of the *Bombyx cynthia*. In the enclosure within the Jardin d'Acclimatation, in the Bois de Boulogne, may be seen at the present moment a large number of these worms of the third generation of this season, feeding in the open air on the ailanthus, or spinning their cocoons. The creatures are of great size, and seem to be in perfectly healthy condition. The cocoons

are generally formed at the extreme end of the branches, or rather of the leaves, for the ailanthus has long compound leaves, with many leaflets, like the ash, where no bird, however light, could rest and make a meal of the occupant, and the worms take the curious precaution, before commencing the cocoon, to attach several threads of their web to the leaf-stalk as high as the third or fourth leaflet, so that if that on which the cocoon is fixed were to be broken from its stalk, it would still be held pendant by these stay-threads.

Commerce.

SUPPLY OF SUGAR.—The following is from Messrs. William Connal and Co.'s circular:—"In forecasting the future of the market for the next two months, there is every probability that the imports will fall far short of those of 1864, when the burden of supply was thrown on the autumn, instead of being distributed, as usual, over the spring and summer; and though a comparison may be more fairly made with the supply for the corresponding period of 1863, it may be materially modified by the revival which has now taken place in the American demand, and which already has raised prices in Cuba about 2s. above those ruling here. The import of 1864 for September and October, amounting to above 110,000 tons, exceeded that of 1863 by 63,000 tons, so that, with our increasing consumption, the stocks on 31st October in the United Kingdom will show a material decrease. Present duty paid prices are about 1s. 6d. lower than in 1863, and 6s. lower than in 1864. The only element to check the market is the yield of the Continental beet-root crop, which in the meantime is not estimated as likely to be greater than that of last year."

THE COFFEE TRADE.—The gradual decrease in the consumption of coffee, usually attributed to the increased consumption of tea, appears to be a most serious matter for the coffee-growers, whose whole prosperity depends upon this particular branch of commerce. The Planters' Association in Ceylon have forwarded a petition to the Chancellor of the Exchequer, that of late years the consumption of coffee has been steadily declining, the deliveries for 1864 showing a falling off of more than 12,000 cwt., as compared with 1863, and of nearly 28,000 cwt. as compared with 1862; while the consumption of tea, on the other hand, has been rapidly on the rise, the deliveries for 1864 showing an increase of about 3,500,000 lbs. over 1863, and nearly 10,000,000 lbs. over 1862. The petitioners urge that this contrast is owing in great measure to the reduction of 5d. per lb. in the duty on tea effected in 1863. They fear that the late further reduction of 6d. per lb. will render the contrast even more striking, and their fears are justified by the fact that, in the first five months of this year, 1865, the deliveries of coffee for home consumption were upwards of 20,000 cwt. less than in the corresponding five months of last year. They point out that, whereas the present duty on tea of 6d. per lb. may be taken as 17 per cent. of the value of the produce, the duty on coffee at 3d. per lb. is above 35 per cent. of its value, and finally, to prevent a further aggravation of these results, and to place coffee in a position to compete on even terms in the home market with tea, the petitioners "pray that in the coming year a reduction may be proposed in the duty on coffee proportionate to that already carried with regard to tea." Messrs. Travers observe that "it is not impossible after all that the loss of trade in the home market may be more than made up by an increased demand on the Continent. At Hamburg, the greatest coffee market in Europe, from which the supplies for the interior of Germany and the countries to the north are derived, the demand is constantly increasing, and the prices have been rising for some years past. This, we believe, is the case all over the Continent. To meet this increased demand,

the cultivation is everywhere spreading, and especially in our possessions in India and Ceylon. In some minor places, however, as, for instance, in Borneo and Réunion, the cultivation of the plant has been much neglected, whilst in other parts its introduction is looked forward to with sanguine expectation as the source of a great export trade. This is so more especially in Feejee, where there are at present 20,000 coffee trees in a most flourishing condition, two-thirds of which will bear fruit next year."

Colonies.

THE MURRAY RIVER DUTIES.—It appears that the New South Wales and Victorian Governments have failed to agree respecting the collection of these duties, and the former Government applied to that of North Australia again to undertake their collection, and which they have consented to do.

LAND IN SOUTH AUSTRALIA.—The area of country and suburban land sold during the year 1864 amounted to 225,171 acres, or 65,379 acres more than in 1863, bringing up the total area of purchased land to 2,893,814 acres, or 19·54 acres per head of the estimated population. At the commencement of 1864 the average for each individual was 19 acres. Two-thirds of the sold land is returned as being in the hands of freeholders maintaining the same proportion as last year. Twenty per cent. of the purchased land is under cultivation. Notwithstanding the large purchases of land for grazing purposes, it is important to note that the ratio of cultivated to untitled land is maintained as 1 to 4, the same rate as at the last twelve months. In comparison with the respective populations there is five times more land under tillage in South Australia than in the adjoining provinces, there being 4 acres to every man, woman, and child in the province, or 12 acres for every male of 14 and upwards. Seeing that of this division of the population only one-sixth are engaged in agricultural pursuits, it follows that an 80-acre section can receive but little more than the continuous labour of one statute male throughout the year. A considerable increase appears in the extent of enclosed land, which now amounts to 3,499,098 acres, compared with 2,900,291 acres, an addition of 598,807 acres, chiefly attributable to the further enclosure of land for pastoral purposes, the fenced pastorage amounting to 2,911,323 acres, against 2,344,324 acres in 1864, an increase of one-fourth. Very large areas in the south-eastern district are enclosed with sheep proof fences of a substantial kind, the aggregate enclosure in that district alone amounting to 1,730,614 acres. Three-fourths of this fencing encloses runs held under lease from the Crown; the whole extent of sold land in the district being 366,403 acres, only 16,593 acres of which are at present under cultivation. One-fourth of the sheep in the colony are depastured within the limits of this portion of the province. The total area of land under cultivation amounts to 587,775 acres, against 555,963 acres in the previous season.

Publications Issued.

ANNUAIRE ENCYCLOPEDIQUE. (*Paris.*) 4to. 1865.—A few years since, the directors of the "Encyclopedia of the Nineteenth Century" commenced the publication of an annual supplementary volume under the title above given, and it has grown to be a work of considerable importance. It includes almost all subjects, political, scientific, literary, artistic, and industrial, official returns and other information being worked in with opinions and arguments by eminent writers. Amongst the most prominent in the new volume are articles on wages, and their relation to the price of food in the present and past

times; on octroi duties, and the arguments in favour of their suppression; on the acclimatisation of Europeans in different latitudes; on asserted degeneracy of races; on the effect of consanguineous marriages; on industrial communities; on temperance societies; on religious dissent in Russia; and on the Rhenish provinces, the author of which advocates the French view of the question with daring energy. As a collection of general facts and a record of opinions in France, the *annuaire* in question is highly important.

Notes.

ORGANIC CHEMISTRY.—A chair of organic chemistry has just been established by Imperial decree in the College of France, and M. Marcellin Berthelot is appointed its first occupant. This is the first time that this important practical branch of scientific education has been introduced in the college course. M. Berthelot has recently made himself popularly known by a volume of *synthetical* lessons on the same subject, and his appointment is regarded as an advantage gained by the friends of positive as opposed to speculative science.

COPPER A CURE FOR CHOLERA.—Doctor V. Burg, of Paris, has given much attention to the preservative and curative action of copper in the case of cholera. He says that in the years 1832, 1849, and 1854, when the cholera committed sad ravages in France, the workmen who were in continual contact with copper always escaped the malady, that not one was known to be attacked even where neighbours and members of their own family were falling around. In support of this assertion Dr. Burg cites the evidence of Messieurs Calla, Chevalier, Sax, and thirty other manufacturers of articles of which copper forms a part. Dr. de Pietra Santa observed the same effect in the case of the boys in the reformatory prison of the Madelonnettes who were employed in making copper locks; and M. Péchalier and M. Saint Pierre, professors in the College of Montpellier, remarked the same fact in the case of workmen employed in the manufacture of verditer. Dr. Clever de Moldini is said to have saved the lives of many of the soldiers in garrison in Paris, by causing them to wear plates of copper next the skin, and administering a few drops of solution of salts of copper every morning and evening. In 1855 Dr. Raymond, who was with the artillery at Gallipoli and Varna, adopted the same practice with complete success. Dr. Burg attributes to copper a direct action, and says that rings or plates of the metal are very efficacious against cramps and other symptoms of cholera. He also gives those attacked, or threatened with cholera, considerable doses of salts of copper. In 1854 he carried invariably about him a diluted solution of sulphate of copper and administer it to his patients in doses of from two to ten drops in a little sugar and water, with one or two drops of laudanum, to prevent the stomach rejecting the copper. He believes copper to be with respect to cholera what quinine is with respect to fever, a sovereign remedy.

CHEMICAL EDUCATION IN FRANCE.—Chemistry is one of the sciences to which France has always paid great attention, and in none has she achieved higher renown or produced more brilliant illustrations. The names of Lavoisier, Gay-Lussac, Thénard, and others, have a world-wide reputation. At the present moment much is being done for the general extension of chemical knowledge as a portion of special education. The establishment of a chair of organic chemistry at the College of France has been lately recorded, whose doors are open to the public without any form whatever. So long as a seat remains unoccupied all the world is free to enter the lecture rooms of the establishment. Recently also a gratuitous school of practical chemistry has been created, by the joint endeavours of the famous chemist, M.

Chevreul, and his colleague, M. Frémy, at the Jardin des Plantes. This is the first instance in which a laboratory has been opened for gratuitous instruction in the practical part of the science. The Government has subscribed 10,000 francs towards the expenses of the school, which was at first supported entirely by voluntary efforts, and M. Ménier, a manufacturing chemist, has presented a like sum, the interest of which is to be applied exclusively to the current expenses of the laboratory. The new school numbers fifty or more regular pupils, and the professor, M. Frémy, now proposes to establish another laboratory to that now in existence, in order that the higher phases of the science may be pursued side by side with the educational branch; or, in other words, that young chemists may have the means of using the knowledge which they have gained in pursuing analysis and discovery. It is to this department that the donation of M. Ménier will be applied, in order that a certain number of young men, who exhibit special aptitude, may be relieved from the necessity of seeking employment yielding direct pecuniary benefit, and be able to give their undivided attention to purely scientific matters. There is little doubt but the liberality of M. Ménier will induce imitators, and if the means thus supplied should produce, or rather encourage, one or two eminent chemists only per annum, the object in view will be attained. Such scholarships will be sufficient to sustain young men of talent in their early researches, while they will in no way tend to undermine individual activity. They will supply stepping-stones, but not resting-places.

CONCRETE ARCHING.—The use of artificial stone and concretes in construction has been attempted in several forms, but generally in that of blocks previously shaped and afterwards applied like stones. In the extensive underground floors of a new barrack now erecting in Paris, the vaultings are being formed with what is called *Betons agglomérés*, the exact composition of which is kept secret by the inventor, M. Coignet. The walls are full thirteen feet apart, and the concrete is laid on timber centreings, and trodden and beaten down with great care. The vault and flooring thus formed is about two feet thick at the spring of the vaulting, but only about ten inches on the crown, and it is found sufficiently strong for all practical purposes. It has also this great advantage that the ceiling can at once be whitened and the floor laid with tiles or cement without further preparation. The process is said to be successful and economical.

Patents.

From Commissioners of Patents Journal, September 15th.

GRANTS OF PROVISIONAL PROTECTION.

Bank cheques, &c., prevention of forgery of—2101—J. G. & R. S. Dale.
Bearings, metal suitable for—2175—W. C. Cambridge.
Bed-quilts, &c., ornamenting the edges of—2253—R. Knowles and J. Lindley.
Boilers and furnaces—2291—E. and E. Green.
Bottles, securing corks in the necks of—2233—W. H. P. Gore.
Brushes—2236—G. Smith and C. Ritchie.
Carpets, &c., making and ornamenting of—2181—L. Clayton.
Carriages, &c., disconnecting horses from—2271—P. Marvaud.
Casks, &c., supplying carbonic acid gas to—2187—C. A. Watkins.
Caustic liquor or caustic lees, making of—2289—T. Nicholson.
Combination drill brace—2212—E. Davies and R. H. Taunton.
Cotton, spinning—2285—J. Pilkington.
Curved designs, sawing—2263—J. Elverson.
Electric Telegraph cables—2213—W. P. Piggott.
Engines, rotatory—2202—W. Graham, J. Broughton, and T. Corkhill.
Fabrics, dyeing and fixing colours in—2206—H. A. Bonneville.
Fustians, &c., cutting the terry or loops of—2251—J. Leslie.
Gas burners—2179—G. Bagnagatti.
Gold and silver, extracting and separating—2229—W. Crookes.
Hair, irons for curling—2283—L. Gachin.
Horse shoes—2197—J. Symmons.
Ladies' dresses, raising the skirts of—2207—H. A. Bonneville.
Land, implement for tilling—2235—S. and S. Gilbert.
Leggings, &c., fastening for—2124—F. J. Jones.
Life rafts and surf boats—2273—A. V. Newton.
Lights, &c., floating—2173—J. Moody.
Locks—2198—E. D. Hodgson.

Metallic pipes, &c., moulds for casting—2215—G. Robinson.
Ovens, &c., heating—2176—F. Thomas.
Paper, vegetable fibre for—1634—W. Delcourt.
Petroleum and other oils, treatment of products obtained in refining—2195—J. Fordred.
Petroleum, &c., receptacles for—2185—G. W. Howard.
Pockets, apparatus for ensuring safety of contents of—2230—C. F. Anderson and I. Durant.
Railway carriages, safety couplings for—2159—F. C. B. Robinson.
Railway chairs, fastenings, and sleepers—2182—H. H. Henson.
Railway ticket case—2239—M. Woodfield.
Railways, permanent way of—2183—W. Rogers.
Rope, &c., manufacture of—2225—T. Cope and W. Guest.
Saucepans, &c., lids or covers for—2249—J. Ward.
Sealing-wax, &c., vessels for melting—2281—W. Bunker.
Sewing machines—2287—R. A. Purkis and G. Callaway.
Silicated alkaline inks, &c., production of—2267—H. Ellis.
Skates—2190—A. V. Newton.
Spirit meter—2193—J. F. Hearsey.
Spirits of turpentine, &c., obtaining—2247—W. E. Newton.
Steam boilers or generators—2189—W. E. Newton.
Steam hammers—2174—D. Davies.
Steam-heating apparatus—2255—A. V. Newton.
Stench trap and sink pipe protector—2220—W. H. Gummer.
Stockings—2177—F. Ayckbourn.
Submarine electric telegraph cables—2209—S. T. Jones.
Submarine telegraph cables—2257—W. Clark.
Sulphurous smokes and vapours, condensing and utilizing—2216—A. Gurilt.
Tanning—2231—J. H. Johnson.
Tar, &c., for paint—2191—J. Moule.
Tubes, cast steel or other metallic—2241—W. H. Brown.
Tubes, well-sinking—2178—W. E. Newton.
Vans, &c., for transporting furniture—2192—F. Hazeldine.
Veneers, &c., ornamenting—2279—T. T. Ponsonby.
Vessels, propelling—2223—W. Clark.
Vibration of sliding windows, retaining and preventing—2232—T. Wrigley and M. B. Westhead.
Violet dye-stuffs—2194—J. A. Wanklyn.
Waist and other belts, elongating and contracting—2224—G. F. White and H. Chamberlain.
Water, supplying boilers with—2211—A. V. Newton.
Water, supplying measured quantities of—2199—R. G. Rattray.
Water, &c., meters for measuring—2269—C. Horsley.
Wheels, removing axle-boxes from—2269—J. Drabble.
Wool, &c., combing—2222—I. and W. H. Bailey.

INVENTIONS WITH COMPLETE SPECIFICATIONS FILED.

Oxalic acid—3124—J. Cathélaz.
Tubing or hose, flexible—2315—G. T. Bousfield.

PATENTS SEALED.

761. J. Walls.	801. W. Clarke.
764. J. Vero.	824. G. H. and J. A. Castree.
765. J. C. Stevenson.	868. J. Williams.
774. I. Philippthal.	932. J. von der Poppenburg.
777. R. T. Crawshaw & I. A. Lewis.	1646. G. Smith.
778. S. Chatwood.	1672. S. Godfrey.
779. W. Menelaus.	1837. T. C. McKeen.
780. A. R. Mackenzie.	1844. G. C. Collyer & C. L. Roberts.
792. W. Berry.	

From Commissioners of Patents Journal, September 19th.

PATENTS SEALED.

785. C. Farmer and T. Turner.	844. H. C. Hurry.
787. W. Arthur.	850. J. Dodd.
788. R. A. Brooman.	851. W. Richardson.
789. W. Clark.	853. W. Betts.
791. J. Smith and S. A. Chease.	866. J. C. Thompson and J. J. M. Green.
793. B. J. Webber.	869. J. Norris.
799. W. J. Coleman.	882. J. Wright.
800. A. P. Tronchon.	889. R. Holroyd and J. H. Bolton.
804. A. Paraf.	891. J. Player.
805. J. Wright.	894. T. W. Nordenfeldt.
808. G. E. Donisthorpe.	956. W. Bulstrode.
809. W. M. Baker.	985. R. Garrett.
815. D. Mackenzie.	990. J. Thompson.
816. L. A. Leins.	1000. T. Skidmore.
818. A. B. Baron von Rathen.	1023. C. Vaughan.
821. J. Lees and M. Mellor.	1032. A. Turner.
823. T. Roberts and L. Luc.	1043. J. Walker.
826. J. C. Morgan.	1147. W. E. Newton.
827. M. P. W. Boulton.	1228. W. E. Newton.
828. W. Simons and A. Brown.	1387. A. V. Newton.
838. D. Arnold.	1897. M. L. Parry.
841. G. F. Marchisio.	
843. E. Wolverson.	

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

2491. G. Ritchie.	2531. J. Pender.
2514. J. R. Johnson and J. S. Atkinson.	2541. S. Flexen.
2510. A. Whytock.	2549. R. Cranston.
2516. J. Rowell.	2562. J. W. Woodford.
2526. A. V. Newton.	2575. R. R. Jackson and J. Coupe.